

Patent Claims

1. Method for producing a ceramic fiber (22) with a metal coating (24)—a reinforcing fiber (20), characterized in that the metal coating (24) on the ceramic fiber (22) is converted to an exterior shape having a polygonal cross section which permits an arrangement of reinforcing fibers (20) side-by-side and above one another without any cavities.

2. Method as claimed in Claim 1, characterized in that the polygonal exterior shape is stamped on the metal coating (24) by cold rolling (10, 12, 30 to 40).

3. Method as claimed in Claim 1 or 2, characterized in that the polygonal exterior shape is designed to have a hexagonal cross section.

4. Method as claimed in any one of the preceding claims, characterized in that the ceramic fiber (22) is first provided with a metal coating (24) and then the polygonal exterior shape is stamped.

5. Method as claimed in Claim 4, characterized in that the metal coating (24) has an essentially constant thickness over the circumference before stamping the shape.

6. Method as claimed in any one of the preceding claims, characterized in that the metal coating (24) is applied to the ceramic fiber (22) by a PVD (physical vapor deposition) process or by rolling a metal wire onto the red hot ceramic fiber (22) under a protective gas atmosphere.

7. Method as claimed in any one of the preceding claims, characterized in that titanium, in particular Ti64 is used as the metal coating (24).

8. Method as claimed in any one of the preceding claims, characterized in that the ceramic fibers (22) comprise essentially the

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elements silicon (Si), carbon (C), boron (B), oxygen (O), aluminum (Al) and/or nitrogen (N).

9. Method as claimed in any one of the preceding claims, characterized in that the reinforcing fiber (20) is used for the production of metal-matrix components (26) (MMCs).

10. Method for producing a semifinished product with a reinforcing fiber (20) produced by a method as claimed in any one of the preceding claims, characterized in that the ceramic fiber (22) is wound onto a base part (26) without any cavities.

11. Method as claimed in Claim 10, characterized in that the base part (26) has grooves (28) in its surface into which the ceramic fibers (22) are introduced.

12. Method as claimed in Claim 10 or 11, characterized in that after winding the reinforcing fibers (20) onto the base part (26) a hot isostatic pressing method is performed.

13. Method as claimed in any one of Claims 10 through 12, characterized in that multiple layers of reinforcing fibers (20) arranged side by side are applied to the base part (26).

14. Method as claimed in any one of Claims 10 through 13, characterized in that a capping part is shrunk onto the free ends of the coiled base part (26).

15. Method as claimed in any one of Claims 10 through 14, characterized in that the base part (26) is designed as a rotationally symmetrical body.